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LITHOGRAPHIC ABSTRACTS, AUGUST 1960

PHOTOGRAPHY, TONE & COLOR CORRECTION

CHECKING HALFTONE DOT VALUES. James F. Nolan. The National Lithographer 65, No. 1, January 1958, pp. 18, 22, 107 (3 pages). This installment gives hints on color analysis of a subject in terms of proportions and strengths of the various colors. A graph shows the relationship between densities and % dot size. Instructions for making halftone positives from masked separation negatives with the aid of a contact screen complete this installment. 3 illustrations.

TONE REPRODUCTION REQUIREMENTS OF THE BLACK PRINTER - PART I. J.A.C. Yule. Graphic Arts Monthly 32, No. 2, February 1960, pp. 66,68,70,72,74 (5 pages). The tone-reproduction requirements for the black printer in four-color printing are worked out with the aid of an additivity diagram. The optimum tone reproduction for use when the density range of the original is unreproducible is discussed. 5 diagrams - 1 Reference.

Part II - IBID 32, No. 4, April 1960, pp. 84,86,88,90 (4 pages). Takes up the relation of various colors to the gray scale. An "ortholuminous" record uses the black printer throughout the tone scale, but darkens areas unnecessarily. A "gray component" black printer would be better, but is hard to prepare photographically (easily done on a scanner). The ideal black printer is between these two extremes. Several ways of achieving such a black printer are explained. 1 Diagram - 5 References.

Part III - IBID 32, No. 5, May 1960, pp. 52-4,56,58,60 (6 pages). In four-color work, the three colors should be reduced where black is to be printed (undercolor removal). This is done by combining a mask made from the black printer negative with each of the other negatives. Varying needs for undercolor removal are discussed. 4 Diagrams, 3 References.

COLOUR MASKING: PART 5 - THE FUTURE OF COLOUR CORRECTION IN THE LIGHT OF PRESENT DAY PRACTICE. Frank H. Smith. Graphic Arts Focal Point #5, 1960, pp. 12-16 (5 pages). Three methods of color correction are: By hand, by masking and by scanner. Hand correction is adequate for paintings, interferes with the photographic quality of a color photograph; which is better masked or scanned. The time factors in masking and scanning methods is discussed. Suggestions are offered as to methods of organizing masking work for the saving of time. One method, the "Vara" mask system is explained in some detail with the aid of illustrations. Electronic scanning is discussed in relation to costs.

PHOTOGRAPHIC TYPE COMPOSITION:5 - THE MONOPHOTO FILMSETTER. H. O. Smith. Graphic Arts Focal Point #5, 1960, pp. 22,3,4,5 (4 pages). The 'Monophoto' Filmsetter closely follows the principles of the 'Monotype', thus simplifying training problems. The keyboard tape puncher is the same for both. The photographic unit parallels the caster in operation. Its output is exposed film or paper in a variety of forms. Output is approximately 11000 characters per hour. Operation, including corrections, is explained. 9 Illustrations.

*NON-LINEAR COLOUR-SEPARATION CORRECTION BY MEANS OF TWO-STAGE NEGATIVE MASKS. I. OUTLINE OF THE PROCESS AND ITS TESTING BY COLOUR-SEPARATION. L. F. Artyushin. Zhur. nauch. priklad. Fotogr. Kinematogr., 1959, 4, 202-209, (in Russian); Photographic Abstracts, Part I, 1960, page 69. In cases where the concentration of dye formed in a colour photographic material is not linearly related to the optical

density, the usual linear masking methods do not give satisfactory results. However, non-linear masks made by the two-stage method direct from the colour negative may be used. A form of testing by means of colour separation is described for the determination of the lack of colour fidelity to be corrected by the masking technique. For determining the correction required because of the interactions occurring in imbibition printing, the making of photomechanical blocks, or colour positive materials, it is essential that the test-object, which consists of the three colour step-wedges together with a grey scale, should be prepared by the successive transfers of the method to be used in practice, and not by printing the colour scales separately in each of the three colours. The corrected colour-separation positives are made by (1) printing a mask direct from the colour negative through a blue (green, or red) filter; (2) binding this with the negative and printing a second mask through a green (red, or green) filter; and (3) combining this second mask with the negative and printing the positive through a blue (green, or red) filter. The positives may be in the layers of a multilayer colour material, in the matrices of an imbibition process, or on the printing blocks of one or other of the graphic arts processes. Equations are derived to describe the reproduction of colours in the process. They are for use in calculating the optimum sensitometric parameters for this type of non-linear masking.

*TRANSFORMATION OF COLOUR SPACE BY HALFTONE DOT PRINTING. F. Lachner. Phot. Korr., 1958, 94, 137-141 (in German); Photographic Abstracts, Part I, 1960, page 68. The Neugebauer equations for the colour produced by three-colour plus black letter-press printing have been rewritten in matrix form. The solutions have been developed in Taylor series and applied to problems of colour corrections and tolerances. A method is proposed for evaluating the visual importance of errors of reproduction.

*PRE-SCREENED FILM. K. R. Yanson. Poligraf. Proizvodstvo, 1958, No. 1, 18-20 (in Russian); Photographic Abstracts, Part I, 1960, page 24. The nature and mode of use of pre-screened graphic arts materials are explained. Work on these is proceeding at the All-Union Research Institute for the Printing Industry, but mention is made of the Kodalith Autoscreen film, already in production. Processes based on the Albert effect and on the Clayden effect have been tried, and preference appears to be given to the Clayden effect as the simpler to manipulate.

*PHOTOTYPOGRAPHY. U. S. Patent 2,920,541 - Application July 13, 1955. Edward Rondthaler and Harold Horman. Official Gazette 750, No. 2, January 12, 1960, pp. 316-317. In phototypographic apparatus for photographically composing textural matter, means for varying the spacing of the text comprising the combination of a guideway, an index member movable along the guideway having an index member movable along the guideway having an index adjacent the guideway, a stencil in conjunction with the index member, means for locating the index towards or away from the guideway, a spacing guide comprising a transparent member having a slanted line thereon, laterally movable in the guideway with respect to the index member, said slanted line being provided with uniform scale divisions thereon and serving to gauge the proper location of the index with respect to a line parallel to the guideway whereby said index may be adjusted with respect to the stencil to vary the spacing of the characters, said index being movably mounted on the index member by means of a pivoted disc, and means for limiting the pivotal movement of the disc.

NOTE ON RECENT DEMONSTRATIONS OF COLOR MECHANISMS. S. Berg and J. Forkner. (In "Letters to the Editor".) Journal of the Optical Society of America, Vol. 50, No. 4, April 1960, page 394. An attempt to repeat the Land experiments of two-color projection using 80 two-inch squares of twenty-four colors randomly distributed, saturated and unsaturated, black, white, gray; photographed through

red and green filters. When the two positives were projected, one through a red filter, the other with white light, colors other than red were seen. Other experiments were tried. Explanations, including eye adaptation, based on two-color theory, appeared to contradict Land's contentions that color theory was inadequate to explain the phenomenon.

*PHOTOGRAPHIC TYPE-COMPOSING. British Patent 796,506, August 2, 1955. R.A.E. Higgonet and L. M. Moyroud. Photographic Abstracts, Part 4, 1959, pages 279, and 280, 2 pages. A photographic type-composing machine includes a carrier plate with characters thereon; a lens system for forming an image of a selected character; means for effecting, in single steps only from a central position, relative rectilinear movements between the plate and the lens system for positioning characters selectively in an image-forming position with respect to the lens system, and abutment means for precisely locating the plate and lens system in their central and relatively shifted positions. The relative shifting movements may take place in two directions at right angles, and both the plate and the lens system may be shiftable.

*PHOTOGRAPHIC TYPESETTING. British Patent 751,063. Mergenthaler Linotype Co. Photographic Abstracts, Part 4, 1959, page 279. A method of producing photographic characters includes creation by light rays of an optical image of a whole array of typographical characters which is projected through an electron tube to produce a corresponding electronic image. The electron pattern is deflected to bring any selected character into a predetermined output area where it is reconverted to optical radiation and photographed.

*PHOTOGRAPHIC TYPE-COMPOSING MACHINES. British Patent 801,873, August 27, 1956. J. H. Williams (the Monotype Corporation). Photographic Abstracts, Part 4, 1959, page 279. An improved variable step-by-step feed mechanism is provided for producing relative linear positioning of successively projected images on a stationary sensitized sheet in a photo-type composing machine such as that of British Patent 563,331. Each step of movement is determined by signals derived from a record strip. Four sheets of diagrams are included.

*PRESCREENED MATERIAL FOR HALF-TONE PROCESSES. British Patent 800,183 (U.S.A. February 12, 1954). R. E. Maurer (Kodak Ltd.). Photographic Abstracts, Part 4, 1959, page 272. Sensitive photographic material intended for half-tone reproduction is prescreened by exposure to short-wave radiation through a half-tone screen so as to become highly susceptible to the Herschel effect. Alternatively the emulsion layer may be uniformly prefogged by short-wave light and then prescreened by exposure to long-wave radiation through a half-tone screen. Either form of the prescreened material is used by giving it a long wave-length exposure to the continuous tone image followed by development, whereby a direct positive image is obtained.

*PHOTOMECHANICAL COLOR-REPRODUCTION PROCESS. French Patent 1,158,810, Filed August 14, 1956. J. Dannenmuller. Monthly Abstract Bulletin, Vol. 45, No. 12, December 1959, page 524. Multicolor picture reproduction is achieved by a combination of photographic and graphic-arts printing processes. The primary or mixed colors are printed by a conventional process - offset or heliotype - using a support made sensitive to light of a supplementary color, e.g., black or brown, by chemical or physical development. For example, a four-color picture may be used that has three screened primary colors and a photographic black, unscreened color.

*COLOR IMAGE SYNTHESIS WITH TWO UNORTHODOX PRIMARIES. A. Karp. Nature 184, August 29, 1959, pages 710-2; Ansco Abstracts, Vol. 19, No. 11, November 1959, pages 475-6, 2 pages. Many facts reported by Land have been verified at Cambridge University Engineering Laboratory. For example, the red-and-white primary combination causes the appearance of bluish and greenish hues on a screen or in Kodachrome photographs, although when examined in isolation each image point reveals only mixtures of red, white and black. With step wedges overlaid by a white or black network to form detached squares against a black background the projection results were monochromatic, as in Land's wedge experiments without network, but against a white background bluish-green hues appeared. With the use of gelatin filters of various colors also only mixtures of the original primaries were seen without the white background, but against white, colors were seen which were mixtures of one primary with the complementary of the other. In natural scenes highlights on glossy objects can act as white cues, and in experiments special attention was paid to the warmest spot, the coolest spot and the white cue, as filters were changed and/or light intensities varied.

*PROCESS CAMERAS. British Patent 810,694 (France, July 31, 1956). H. Dacquay. Photographic Abstracts, Part 6, 1959, page 374. In a photo-copying apparatus intended for obtaining half-tone screened pictures and having the film compartment fixed to a rigid bed and objective and object carriages moveable along the bed, a number of ruled screens are stored vertically above the optical axis and are displaceable in the direction of the axis to bring the desired screen into register with an extractor by means of which it can be transferred to a moveable holding positioning it in front of the film.

*PHOTO-MECHANICAL SCREENING. British Patent 813,116, July 8, 1955. K. and E. Schumacher (Klimsch and Co.). Photographic Abstracts, Part 6, 1959, page 397. Improvement in detail and definition of half-tone reproductions is claimed if the screen is formed with the apertures smaller than normal, say one-ninth of the screen area, and the screen is moved on a defined path during exposure so as to give an integrated dot. Suitable screen arrangements are described.

*COLOUR VISION AND THE PRINTER. D. Farnsworth. Print. Tech. vol. 3, no. 1, Sept. 1959, pp. 17-24; discussion pp. 24-7; Printing Abstracts 14, No. 11, November 1959, p. 905. Colour blindness, colour discrimination, colour description, metamerism and factors affecting colour judgment (lighting, area of colour, induced contrasts - simultaneous, successive - and the effects of surround) are discussed.

*ON MAKING HALFTONE SEPARATION POSITIVES FROM COLOUR NEGATIVE FILM BY THE DIRECT METHOD. K. Koseki and S. Takeuchi. Bull. Tech. Ass. Graph. Arts, Japan, vol. 1, no. 1, December 1958, pp. 6-11 (in Japanese); Printing Abstracts 14, no. 11, November 1959, p. 895. Good results were obtained in an attempt at making halftone separation positives from colour negative film using a masking method without hand retouching. The colour negative films were Ektacolor, Agfacolor negative. Fujicolor negative and Konicolor negative. The one-stage masking method was used for the higher contrast film and the two-stage method for the lower contrast one, and the colour correction masks were developed in a coupling developer which formed a magenta dye for yellow, magenta plates and blue dye for cyan plates. Screening was done with a grey contact screen through the camera using a fluorescent light source. As a guide to tone and colour reproductions the grey and colour scales were used. Consequently, the tone-reproduction curve was not linear but had a toe and a shoulder, and the shape of this curve was very important. The prints showed excellent results as regards sharpness and were rich in detail. However some problems in color reproduction were apparent.

*PROCESS AND APPARATUS FOR PHOTOMECHANICAL SCREENING. British Patent 813,116, Filed July 8, 1955. K. Schumacher; E. Schumacher. Assigned to Klimsch & Company. Monthly Abstract Bulletin, Vol. 46, No. 2, February 1960, page 86. A ruled screen is described which has very much smaller windows than usual (about 1/10 of unit screen area). The screen is used almost in contact with the sensitive material, and each window thereby generates the "elementary dot." The screen is moved during exposure in such a manner that the window traces out a spiral. The tone reproduction varies as the speed of movement of the screen, or as the light intensity is varied.

PLANOGRAPHIC PRINTING PROCESSES

*PHOTOMECHANICAL KEYLINE PRINTS. U. S. Patent 2,927,020 96/32 8/16/54-3/1/60. D. A. Zilli; Toronto, Ont. Ansco Abstracts, Vol. 20, No. 3, March 1960, page 159. Instead of blanking out solid areas in a 2-tone original with white ink, leaving only narrow keylines, a photographic process is used. It involves making of a print from a high-contrast negative on low-contrast bromide paper with a solarizing exposure and a high contrast developer. Removal of the fog within the keyline areas of this paper print by Farmer's reducer leaves a keyline image from which two printing plates are made, one for printing the line image in one color, the other for printing a differently colored background. It is believed that during the solarizing exposure diffusion of light occurs around the marginal edges of the letters resulting in a less exposed image of greater resistance to the reducer than the overall solarization fog.

*PHOTOPOLYMERIZABLE CHELATE COMPOSITIONS. British Patent 827,512 2/13/56-2/3/60. Du Pont. Ansco Abstracts, Vol. 20, No. 3, March 1960, page 147. The compositions contain a polyvalent metal, a polymerizable vinylidene and an addition polymerization initiator. Corresponds to French 1,172,327 (abstr. 1101/59).

*RETOUCHING OF PRINTING PLATES WITH SILVER IMAGES. German Application 1,075,948 57d 2/01 5/21/58. E. Hartfeld to Agfa. Ansco Abstracts, Vol. 20, No. 3, March 1960, page 151. Silver images obtained by the silver halide transfer process for offset plates are rendered ink-receptive by treatment with aqueous solutions according to German 1,011,280 and Appls. 1,058,844 and 1,064,343 (abstrs. 1165/57, 875/59 and 1584/59). If undesired silver has been removed by conversion to silver salts with a bleaching solution, these salts are also rendered ink-receptive, which is undesirable. The plates can be simply and inexpensively retouched by covering the unwanted silver with a water-repellent coating which inhibits reaction with the aqueous solutions. Examples are a 5% vaselin-benzene and a 5% stearic acid-carbon tetrachloride solution.

*PRESENSITIZED DIAZO RESIN PRINTING PLATES. French Patent 1,200,135 1/4/57 - 12/18/59. J. M. Case to MMM. Ansco Abstracts, Vol. 20, No. 3, March 1960, pages 158-9, 2 pages. A thin aluminum sheet preferably alloyed with 1.25% manganese (3003H19) is immersed in a 20% trisodium phosphate solution of 70C for 5' to degrease the metal, then in a 2-5% sodium silicate solution of 80-100C to form a thin insoluble silica layer. After washing and drying, a thin coating of a light-sensitive diazo resin, prepared as described, amounting to about .01-.03 g per m^2, is applied and the plate exposed to ultraviolet light, whereby the resin becomes insoluble and forms an organophilic layer. Next the main coating consisting of a mixture of polyacrylamide and diazo resin is applied. Exposure to ultraviolet light of the order of 1-5' renders the colloid insoluble during the following development by a water rinse which bares the organophilic undercoating. An emulsion of a pigmented resin adhering to the undercoating but not to the hydrophilic relief can be used as additional developer to improve the visibility of the image and facilitate the inking. Among alternatives suggested for the process is the copolymer PV/MMA (GAF), and an alcoholic cupric chloride solution as developer which deposits electrolytically copper on the metal base in the exposed areas.

*MOLDED PRINTING PLATES. British Patent 827,613 7/10/56 - 2/10/60. J. Williams; Berwyn, Ill. Ansco Abstracts, Vol. 20, No. 3, March 1960, page 160. Plates for letterpress, offset, or rotogravure printing are obtained by impressing an etched metal plate on sheets of partially cured thermosetting resin on a laminated kraft paper, fiberboard or metal core unaffected by heat and pressure.

*PROCESSING TRANSFER PRINTING PLATES. British Patent 824,174 2/2/55-11/25/59. Polychrome Corp. Ansco Abstracts, Vol. 20, No. 3, March 1960, page 160. An unhardened colloid image made with a planographic printing plate of the type of British Patent 732,114 (abstr. 793/56) transferred to a paper base is made ink-receptive by treatment with a solution containing .5-5% of a trivalent metal salt (aluminum chloride) and a soluble organic acid (tannic acid) buffered to pH 1.5-2.5, which does not form a precipitate with the metal cation.

*PROCESSING OF GELATIN RELIEF PRINTING PLATES. U. S. Patent 2,927,858 96/35 5/11/56-3/8/60. L. Mayr; Munich, Germany. Ansco Abstracts, Vol. 20, No. 3, March 1960, page 157. A silver halide gelatin emulsion positive image, printed through a screen, is developed and fixed without hardening. In order to produce a relief image of the silver or screen elements and to disintegrate the excess gelatin, the film is treated with a solution containing (per 900 ml water) 10 g acetic and 50 ml sulfuric acid, to bring the pH below the isoelectric point of the gelatin and induce swelling, 90 g. crystalline sodium sulfate and 30 g ferric sulfate, to control the swelling, and about 10 g of hydrogen peroxide, to disintegrate the gelatin.

*PHOTOPOLYMERIZABLE LAYERS. U. S. Patent 2,927,023 96/35 8/27/56-3/1/60. E. L. Martin to Du Pont. Ansco Abstracts, Vol. 20, No. 3, March 1960, pages 147-8, 2 pages. The layers consist of 20-40% of an addition polymerizable unsaturated component, 80-60% of a neutral cellulose ester or ether soluble in water to an extent of at least 2%, and .01-5% of a light-activated initiator of addition polymerization (benzoin methyl ether). The polymerizable component having a molecular weight between 150 and 500, contains preferably vinylidene groups conjugated with ester or amide structures, is compatible with and has some plasticizing action on the cellulose derivative. In the examples (1,3-bismethacrylamido-) 2-propanol and bis-(1,3-diaminopropoxy-) ethane acylated with methacrylyl chloride are used. To modify the rheological properties of the composition up to 20% of a polymeric filler, including polyvinyl alcohol and gelatin, can be used and 10-15% of a plasticizer such as triethylene glycol. The layers, whose optical density should not exceed .5 per mil or 5.0 overall, are developed in water of 25-50C, to which a minor proportion of an organic solvent may be added.

*PHOTOPOLYMERIZABLE LAYERS. U. S. Patent 2,923,673 204/158 5/21/58-2/2/60. S. H. Munger to Du Pont. Ansco Abstracts, Vol. 20, No. 3, March 1960, page 148. A material which can be readily cast, pressed, or extruded to form photopolymerizable layers is composed of a partially esterified cellulose acetate, propionate or butyrate heated with a dicarboxylic acid (succinic, maleic, phthalic) anhydride, an addition polymerizable ethylenically unsaturated compound (triethylene glycol diacrylate), 10-60% of the mixture, and a tertiary amine esterification catalyst (diethylcyclohexylamine, pyridine) to 85-180C for less than an hour. Also incorporated is a polymerization initiator which is activated by light, not by temperatures up to 185C (.1% anthraquinone). The reaction is preferably carried out in a blade mixer, e.g. at 105-160C during 10-30'. A 3-250 mil sheet is then formed of the material and bonded to a metal sheet as support by means of a thermosetting adhesive. An exposure of 5' to an 1800-w high pressure mercury arc is mentioned. The layers are developed by spray washing with .08N sodium hydroxide.

*PHOTOLITHOGRAPHY. British Patent 793,550, June 9, 1955. A. Spencer (Gestetner Ltd.). Photographic Abstracts, Part 4, 1959, page 270. In process for production of

offset lithographic prints a cellulose triacetate film base is coated with a linseed-oil-based subbing layer followed by a coat of silver chloride-gelatin emulsion. After exposure the image is developed and development stopped with acetic acid and the unexposed areas removed with warm water down to the oleophilic subbing layer. There is thus obtained a negative record in hydrophilic relief and a complementary positive record in oleophilic intaglio which holds the ink.

*PHOTOPOLYMERIZABLE COMPOSITIONS FOR PRINTING PLATES. British Patent 794,572, May 9, 1955. A. de Waile and J. H. Croker (Gestetner Ltd.). Photographic Abstracts, Part 4, 1959, page 270. Esters of epoxy-resins may be used as the light-polymerisable substance on a photographically produced printing plate for offset lithography. An epoxy-resin derived from epichlorohydrin and diphenylol propane, such as Epikote Resin No. 1009, is esterified with cinnamoyl chloride and the resulting resin ester after purification applied as a coating in solution in 95% toluene/butanol with addition of a catalyst, for which dicinnamylidene vinyl ketone is particularly recommended.

*IMPROVEMENT IN PLANOGRAPHIC PRINTING. British Patent 798,339 (Denmark, July 22, 1955). C. E. Larsen. Photographic Abstracts, Part 4, 1959, pages 269-70, 2 pages. The lack of serviceability of some planographic plates has been traced to electrolytic corrosion, which is found where fluctuations of voltage difference occur between the attached printing plate and the metal parts of the machine. This is corrected by forming an electrically insulating barrier in the electrical path from the plate through the frame of the machine to the inking roller, measuring the electrical potential across this barrier and keeping the electrical potential across the barrier substantially constant by means of an adjustable potentiometer connected to a fixed source of voltage.

*LITHOGRAPHIC PRINTING PLATE. British Patent 812,508, April 1, 1957. J. L. Beatty (A. B. Dick Co.). Photographic Abstracts, Part 6, 1959, page 397. In the manufacture of a planographic printing plate multi-coating can be avoided when the plate consists of a paper base sheet with a water insoluble lithographic surface coating made up of an inert filler, polyacrylic acid and a metal compound such as zinc, magnesium or calcium oxide which in presence of sufficient ammonia forms a water-insoluble polyacrylate and a water-soluble water-stable complex polyacrylate double salt. One part of metallic compound is present per 2 to 20 parts of filler and one part of polyacrylic acid per 2 to 10 parts of filler plus metallic compound. The ink-receptive image anchors on to this coating.

*LIGHT-SENSITIVE POLYMERIC COMPOUNDS. British Patent 813,605 (U.S.A. October 13, 1954). L. M. Minsk and W. P. Vandeusen (Kodak Ltd.). Photographic Abstracts, Part 6, 1959, page 398. Light-sensitive polymers for making photographic relief images consist of polyvinyl alcohol which is combined with cinnamic acid to the extent of 22-40 per cent of the hydroxyl units and the remainder esterified with acetic acid or a dibasic organic acid such as succinic or phthalic acid. A light sensitizing agent is added to increase the effect speed of the polymers.

*LIGHT-SENSITIVE POLYMERIC COMPOUNDS. British Patent 813,604 (U.S.A., October 13, 1954). L. M. Minsk and W. P. Vandeusen (Kodak Ltd.). Photographic Abstracts, Part 6, 1959, page 398. Light sensitive polymers for making photographic relief images consist of polyvinyl alcohol partially esterified to the extent of 13.5 to 60 per cent with cinnamic acid or m-nitro-,o-chloro- or p-methoxy-cinnamic acid and the product then further partially acetylated. A light-sensitizing agent is added to increase the effective speed of the polymers.

*INK- AND WATER-BEARING PROPERTIES OF METAL SURFACE IN BIMETALLIC OFFSET PLATES. E. Pretsch. Kozlemenyek, Budapest, A1, 1957, pp. 45-54 (in Hungarian; German translation U 1426 available at the IGT, Leipzig); Printing Abstracts 14, no. 9, September 1959, p. 746. A discussion of physico-chemical investigations into the processes occurring at the surfaces of bimetallic plates.

*BIMETALLIC FOILS FOR PLANOGRAPHIC PRINTING. Amt fur Standardisierung. E. Germ. Stand. TGL 3026-56, Fachbuchversandhaus Leipzig, Leipzig C1 (in German); Printing Abstracts 14, No. 11, November 1959, p. 890. Standards are given for the composition of copper and chromium baths; plating conditions and the control of baths.

*EXPERIENCES WITH THE MIKRAL-PLATE. Anon. Fachberater, No. 73, July-August 1959, pp. 49-50 (in German); Printing Abstracts 14, No. 11, November 1959, p. 889. The following advantages are claimed: (1) An 18-step screen wedge can be used in the reproduction process, which means a greater tone-range; (2) as the result of the micro-grain, all the tone values of the original are reproduced with absolute fidelity; (3) There are no tone variations during printing. Proof and machine print are equal in quality; (4) Emulsification of the ink is inhibited owing to the use of the minimum of water; (5) The run can be increased by 30-50% as compared with zinc.

*DIAZOTYPES (VII +) Guinau. Intergrafia, vol. 9, no. 19, 6 July 1959, p. 375 (in Dutch); Printing Abstracts 14, No. 11, November 1959, p. 889. Presensitized printing plates and diazo coatings for these are discussed.

PAPER AND INK

PAPERS FOR THE LITHOGRAPHER. Ronald I. Drake. Lithographers' Journal 44, No. 9, December 1959, pp. 16,19,20,21,22,54 (6 pages). The first part of this article takes the form of a somewhat detailed listing of the various types of papers generally used in lithography with their characteristics and common uses. Printability factors and paper conditioning, storage and handling are discussed.

*PROPERTIES OF AND REQUIREMENTS FOR OFFSET PRINTING PAPERS. E. Lemke. Arch. Druck Pap., vol. 96, no. 2, 1959, pp. 181-4, 187-8 (in German); Printing Abstracts 14, No. 9, September 1959, p. 714. The properties required in offset papers and the possibility of improving them are indicated. The factors (e.g. flatness, curling, mechanical stretching in the printing machine, pick resistance, moisture absorption by the surface, whiteness, smoothness, etc.) affecting the quality of the print are discussed.

THE INFLUENCE OF PROGRESS IN PRINTING TECHNIQUES ON THE MANUFACTURE OF PRINTING PAPERS (I+). G. Martin. Imprim. Nouvelle, no. 38, Apr. 1959, pp. 11,13,23,25,27,29, 31,33,35,37,39-40 (in French); Printing Abstracts 14, no. 9, September 1959, p. 714. A discussion on the increase in speed and more general use of colour in relation to letterpress, offset and photogravure machines.

THE INFLUENCE OF PROGRESS IN PRINTING TECHNIQUES ON THE MANUFACTURE OF PRINTING PAPERS: PAPERS FOR SHEET-FED MACHINES: PAPERS FOR WEB-FED MACHINES (III, IV+). G. Martin. Imprim. Nouvelle, no. 40, June 1959, pp. 5-21 (odd nos. only) (in French); Printing Abstracts 14, no. 9, September 1959, p. 714. The properties required in letterpress and litho papers for sheet-fed machines, and in gravure and litho papers for web-fed machines are discussed.

*NEW STANDARDS FOR LETTERPRESS AND OFFSET PRINTING PAPER. R. E. Kaganova. Poligraf. Proizvodstvo, no. 11, 1958, pp. 26-8 (in Russian); Printing Abstracts,

vol. 14, no. 9, September 1959, p. 714. This is a revision of Gost 5621-50 and comes into force in 1960. The number of grades of antique wove paper is increased to 6 and a special halftone printing paper is provided for use on sheet-fed rotary perfectors. The requirements for Paper no. 1 are increased from 150 to 200 sec. in the case of smoothness and from 15 to 23% for the ash content. Special types of paper are also specified for offset printing.

*PAPER CURL CONTROLLED BY CHEMICAL STABILIZER. Anon. Packag. News, vol. 6, no. 6, June 1959, p. 39; Printing Abstracts 14, no. 9, September 1959, p. 715. Stub-U-Cel, made in the U.S.A. by the Upson Chemical Corp. stabilizes paper dimensionally by 'penetrating the individual molecules of the cellulose'. It is particularly useful for laminates of metal foil and paper. The degree of treatment applied depends on the degree of stability required; paper can be impregnated throughout or to a controlled depth on only one side or both sides of a sheet. It is a glycol dicarboxylic acid monoester, dissolves in water and is applied to paper with ordinary paper mill equipment.

*PAPER FROM SYNTHETIC FIBRES. A. J. Hentschel. Zellstoff u. Papier, Vol. 8, no. 4, 1959, pp. 122-7 (in German); Printing Abstracts 14, no. 9, September 1959, p. 712. Fibres used for paper making are metal wool, quartz, glass, p.v.c., chlorinated p.v.c. polyamide, polyacrylic nitrile and polyester fibres. Experiments carried out at the Institut fur Zellstoff und Papier, Heidenau, with a view to preparing papers from glass or synthetic organic fibres alone, are described. They are used as filter papers, in the electrical industry and as bags for transporting large weights, but they are too expensive to use as a paper substitute.

*WHAT'S NEW ABOUT THE NEW PAPERS. A. R. Gardner. Product Engng. vol. 30, no. 7, 16 Feb. 1959, pp. 50-3; Printing Abstracts 14, no. 9, September 1959, p. 711. New treatments add moisture resistance, stretchability, and heat and flame resistance to conventional papers. New fibres add strength and dimensional stability. Describes what is available and what is to come.

CHEAPER WAY TO MAKE PAPER. Anon. Pulp and Paper Magazine of Canada 60, no. 5, May 1959, pp. 224, 226; Printing Abstracts 14, no. 9, September 1959, p. 711. A paper making process claimed to save 25% of raw material and make better paper is reported from Austria. One mill is already successfully using the new method, called the 'ALB semicel-process' (spelt ALB Semicell elsewhere), and the paper thus produced gives a 10 to 15% greater resistance to tearing than the old methods. Newsprint can be produced 10% cheaper and first-class writing paper 30% cheaper. The process, by impregnating coniferous and deciduous wood with monosulphite in an alkaline medium at proper cooking conditions, sulphonates lignin and transforms it into a thermoplastic form without dissolving it. By mechanical treatment of the impregnated wood in the shape of logs or chips a bright pulp with a high content of long fibres is obtained. If ALB Semicel is treated with peroxide, a high degree of whiteness is obtained. Good printability and excellent smoothness qualify this pulp for outer layers of duplex and triplex board.

*FADING OF YELLOW IN FOUR-COLOUR PRINTS. Schreiner. Fogra Ber., No. 685, 29 Apr. 1959 (in German); Printing Abstracts 14, No. 9, September 1959, p. 710. The fading is best prevented by varnishing with a lacquer containing a UV absorber. E.g. 0.5% of Permyl B 100, dissolved in a cellulose nitrate solvent, was added to a cellulose nitrate lacquer, the lacquer being adjusted to a suitable viscosity by modifying the amount of solvent used.

*PASTE FOR ADDITION TO INKS FOR THE MULTI-COLOUR PRINTING OF COATED ART. Anon.

Adhasion (Druckfarbe Beil.), vol. 3, no. 5, May 1959, p. 270 (in German); Printing Abstracts 14, No. 9, September 1959, p. 709. Pastes consisting of 65-67 kg. linseed oil, 30 kg. lead-manganese resinate powder and 3-5 kg. beeswax or 45-47 kg. linseed oil, 20 kg. lead-manganese resinate powder, 30 kg. Japan drier and 3-5 kg. beeswax, when added (10-15%) to printing inks, prevents excessive penetration of the ink medium into the paper and accelerates the drying of the ink.

*THE POROUS STRUCTURE OF PAPER. H. F. Rance (Wiggins Teape Research Organization). Proceedings Symposium Colston Research Society 10: 302-11; discn.: 311-21 (1958). Abstract Bulletin of The Institute of Paper Chemistry 30, no.3, November 1959, p. 336. Paper is essentially a felted and bonded assembly of fibers arranged primarily in the plane of the sheet. The compactness of the structure depends partly on the size and pliability of the original fibers and partly on the external and internal compressive forces which occur during the extn. and evapn. of the water left in the sheet after its formation by drainage from a dil. fiber suspension. Paper porosity is usually measured empirically and defined either as the vol. of air passed per unit time through a unit area of paper under a certain pressure difference, or as the time required for full penetration by a specified liquid, such as water or oil. The vol. pore distribution can be found by measuring the vol. penetration of mercury into paper under gradually increasing pressure. The area pore distribution has been determined by measuring pressure through a sheet previously soaked in a nonreactive liquid (dioxane). 24 ref.

*ON THE PENETRATION OF OIL INTO PAPER, Part 2. Yoshihiko Fujii and Masami Kanemoto. Journal Japan Technical Association Pulp and Paper Industry 13, no. 3: 189-96, March 1959 (Jap.; English summary) cf.A.B.I.P.C. 29:1339-40; Abstract Bulletin of The Institute of Paper Chemistry 30, no. 3, November 1959, p. 334-335. Plots of oil-penetration vol. vs. the square root of penetration time for five different oils showed a distinct breaking point and two different slopes above and below this point, resp. The ratio of these slopes for two oils penetrating into a given paper was a straight-line function (passing through the origin) of the square root of the ratio of surface tension/viscy. coeff. of the oils. The ratio of the two slopes gave an indication of an oil's contact angle and a paper's capillarity. 5 ref.

COLOUR MEASUREMENT OF FLUORESCENT PAPERS. J. M. Adams. Printing Technology, Vol. 3, No. 2, January 1960, pp. 5-21 (17 pages). The precautions to be taken when measuring the colours of fluorescent near-white papers are reviewed. A Sheen abridged spectrophotometer was fitted with a high pressure xenon arc lamp, so that spectrophotometric curves of papers, as they appeared under daylight, could be drawn. Curves of typical papers under tungsten filament lighting and daylight are compared. 10 line diagrams and graphs - 8 references.

SENSITIVE FLAW DETECTOR SOLVES NOISE PROBLEMS. M. P. MacMartin. Electronics 33, No. 16, April 15, 1960, pp. 64-66 (3 pages). Electronic system finds defects in paper despite noise amplitudes which are comparable to flow-signal amplitudes.

LITHOGRAPHY - GENERAL

A PROGRESS REPORT ON RESEARCH IN THE LITHOGRAPHIC INDUSTRY. Otis A. Wells. Lithographers Journal 44, No. 12, March 1960, pp. 10,11,12 (3 pages). The research and educational work of the Lithographic Technical Foundation has contributed immeasurably toward keeping the lithographic industry growing and prospering. Its constant search for new methods, new techniques has done more toward helping lithographers maintain a profit margin throughout the years than any other single factor. Some specific projects mentioned as having been reported cover "balanced inks", photographic masking, paper color, comparison of methods of color printing,

testing of light sources to replace arc lamps, measurements of things which define quality, the Press Inkometer, the Nicohol plate treatment, zinc plate studies, studies of paper and ink properties and how they effect printing and evaluation of new materials and products. Two day seminars are mentioned as means of putting new information to work.

THE HEART OF LITHOGRAPHY IS STONE - Part 2. Joan K. MacNeary. Modern Lithography 28, #2, February 1960, pp. 42-43 (2 pages). (Part I - October 1959, p. 69). Lithographic history in the "Stone Age" in the U.S. in the 19th Century involved many forms of illustrations. Some of those mentioned include portraits of Washington fro home use, sheet music covers, scenes from the Revolutionary, Mexican and Civil Wars, etc. Some of the earlier lithographers including Currier and Ives, are mentioned.

STONE AGE REVISITED. Anon. Modern Lithography 28, No. 3, March 1960, pp. 28,29, 30, 143 (4 pages). Story on a small shop still doing lithography on stone. Much of it is related to limited edition book work and the image as drawn by the artist on stone is transferred to a zinc plate and run on a modern offset press. "The special attractiveness of the stone transfer process is the fine halftone quality which can be obtained because of the fine grain of the stone. Even the finest halftone screen would not match the reproduction. - - "A litho stone is equivalent to a 1000-screen job by conventional lithography." The process is described step-by-step and with nine illustrations. Stone lithography as an artistic process has been growing in popularity in recent years.

COLOR CONTROL CHARTS. Anon. Modern Lithography 28, No. 3, March 1960, pp. 47, 141, 143 (3 pages). Description of a color control chart book originally developed by a printer for his customers, now available generally. Inks, paper (both offset and enamel) and press techniques are those generally available. Two color and multicolor combinations are shown. 1 Illustration.

PLANNING FOR A NEW PRESS. Richard J. Schmied. Modern Lithography 28, No. 2, February 1960, pp. 38-39 (2 pages). Author points out that a new press will not go into production by itself. Accessory equipment such as suitable lighting, water supply, paper storage and skids, roller racks, smaller items in a list, etc. should be planned as soon as the press is bought and before installation. Pressman training is another item. A step-by-step procedure is given for testing out with a test plate and blanket.

PLATE STORAGE PROVIDES LIBRARY OF VALUABLE MATERIAL. Anon. The Inland and American Printer and Lithographer 144, No. 4, January 1960, pp. 72-73 (2 pages). Western Printing and Lithographing Company has model storage department. Fourman team keeps files of plates, proofs, films, and press sheets. It supplies the firm's salesmen with useful materials for future projects.

WHERE HAS LITHO GROWN? Anon. Modern Lithography 28, No. 4, April 1960, p. 38 (1 page). U. S. Census of Manufactures, 1958, Bulletin Mc(P)-27B-3. A special ML Staff analysis. A US map showing percentage gain, 1958 over 1954, of value added by Manufacture and gain in total employees in the litho industry.

QUALITY LITHOGRAPHY REQUIRES UTMOST ATTENTION TO FINE DETAILS. J. Tom Morgan, Jr. The Inland and American Printer and Lithographer 144, No. 4, January 1960, pp. 52,3,4, 5, 103 (5 pages). Author first discusses the quality of lithographic printing in general terms, then goes on to describe some of the steps taken to control quality in his plant. A step wedge with 15 steps with 50% increment in exposure and each step numbered was one tool used. This was correlated with densitometer readings for both

black and process colors on various papers. This served as a "common denominator" of understanding among various departments. Its use in the various steps of the process is described.

HOW TO KEEP OFFSET PRESS FEEDERS FUNCTIONING PROPERLY. Charles W. Latham. The Inland and American Printer and Lithographer 144, No. 4, January 1960, pp. 50-51 (2 pages). Author first points out the consequences of feeder malfunctions, particularly in offset press makeready, and how increased costs can result. Some danger signals which warn of feeder trip-off are described. The relationship of paper to feeding troubles is discussed and it is pointed out that cheap paper can be poor economy if it leads to trouble in feeding. Some tips on feeder operation are given with the aid of four diagrams.

SURVEY FINDS MOST ART IS INCORRECTLY PREPARED. Anon. National Lithographer 67, No. 3, March 1960, pp. 35-91 (2 pages). Five questions asked, and some of the answers: 1. What % incorrectly prepared? ans. 5 to 75%, average above 50%; 2. Specific types of errors? ans. Poorly keyed, Color flaps do not register, Slovenly pasteups, Off color transparencies, etc.; 3. Time lost? Costs customer 1/3 to 1/2 more. 4. Solution to problem? Education of customers and artists.

A COLOR MONITOR FOR SHEET FED MACHINES. G. S. Allen and K. B. Morris. Printing Technology vol. 3, no. 2, January 1960, pp. 23-37 (15 pages). The problem of monitoring and controlling ink film density on sheet fed machines is outlined. The course of development is traced of equipments which have been designed to solve this problem. The resulting equipment and its application to sheet fed presses is explained, and the results of field trials with this equipment are discussed. 3 diagrams - 2 references.

THE PRESENT-DAY TREND OF PHOTO-LITHO GRAPHIC PRACTICE IN EUROPEAN COUNTRIES. S. H. York and F. G. Wallis. The British Printer 73, No. 2, February 1960, pp. 114-117 (4 pages). A report on a tour of Western European lithographic plants. Two general impressions were: 1. Much money has been invested in equipment since the war; 2. German equipment "reigns supreme." Other trends noted: darkroom cameras are replacing gallery type; open carbon arcs are not being replaced; vertical enlargers were common; most screen positive work is now being made by contact screens; glass is used for continuous tone color separation; films for black and white and for screen positives; much American photographic material (Ansco and DuPont) is in use. Other comments covered a variety of details.

PREPARING MECHANICALS FOR OFFSET - Part I. John Pince. National Lithographer 67, No. 2, February 1960, pp. 32-5 (4 pages). A thorough study of the purpose and use of register marks, both in the preparation of copy and throughout the process. Several methods are shown. 5 line illustrations.

Part II - IBID 67, No. 3, March 1960, pp. 32-5 (5 pages). This part takes up the step-and-repeat machine, planning for work and turn, etc., planning for backing, reproduction of type and certain special subject line pencil drawings. 5 line illustrations.

Part III - IBID 67, No. 4, April 1960, pp. 38-9, 94 (3 pages). This part considers planning for the bindery, register problems with two or more colors, and the use of overlays and pin and punch register systems.

GOOD HOUSEKEEPING MEANS MONEY. Roy P. Tyler. National Lithographer 67, No. 2, February 1960, pp. 36-7, 66 (3 pages). From a talk before the National Association of

Photo-Lithographers Convention. Preventive maintenance, cleanliness, lubrication, regular inspection and electrical equipment are discussed. In one category, lubrication, the coverage takes in 1. Selection of lubricant; 2. Proper amount and frequency of lubrication; 3. Proper storage and care of lubricant and equipment to avoid contamination and 4. Proper personnel for that job.

OFFSET PACES THE LABEL FIELD. Leroy L. Gamse. National Lithographer 67, No. 2, February 1960, pp. 38-39 (2 pages). Some figures are cited to show the phenomenal growth of lithography in the label field in recent years. It has grown faster than the label field as a whole. In 1939, estimates put lithographed labels at 40 to 45% while in 1958, it was 55-60%. Economy and speed are given credit. Several other reasons are cited. 1 Illustration.

LITHOGRAPHING ON ALUMINUM FOIL. James T. Trousdale. National Lithographer 67, No. 3, March 1960, pp. 40,41,42,71,92,94 (6 pages). Lithography has advantages of being practical and economical even on small or moderate size runs, and can handle full color photographic reproductions. Other advantages are size of sheet that can be printed, improvements in techniques, blankets and inks. Improvements have been made in laminating foilstocks. Suggestions are offered for handling foilstocks, which are available from 25 lb. paper backed up to heavy board and up to 52 x 76 in. in size. The printing surface is a nitrocellulose or vinyl type coating. Press adjustments, inks, blankets, plates, drying are discussed and helps given. 2 Illustrations.

GRAPHIC ARTS - GENERAL

GRAPHIC ARTS HAS WAYS OF CORRECTING THE RESEARCH MESS. Marvin C. Rogers. Printing Production 90, No. 5, February 1960, pp. 50,1,2 (3 pages). This final installment of a series is largely a broad general discussion of the philosophy of research as applied to the Graphic Arts specifically. A five element plan for Graphic Arts Research is outlined as follows: 1. A central research activity for basic study; 2. Specialized process research and development (with LTF cited as one example); 3. Specialized industrial research and development. 4. Specialized equipment research and development; 5. Highly specialized development.

HIGH-RESOLUTION XEROGRAPHY BY AEROSOL DEVELOPMENT. J. T. Bickmore, M. Levy, and J. Hall. Photographic Science and Engineering 4, No. 1, January-February 1960, pp. 37 thru 43 (7 pages). Resolutions in excess of 100 line-pairs/mm can be obtained by several different xerographic techniques. This paper discusses studies on aerosol development of selenium photoconductors. Image resolution, density, and general quality were determined as functions of process parameters. The charged selenium plate was contact exposed to a reduced parallel-line test chart. The Xerographic plate was then developed by passing an aerosol containing fine charged developer particles between the xerographic plate and a closely-spaced conductive electrode parallel to the Xerographic plate. Important process parameters were found to include the relationship between developer powder charge and xerographic plate charge, development time, aerosol concentration, and the potential of the development electrode relative to the xerographic plate. The period between exposure of the charged photoconductor and development could be prolonged for 30 min. or longer with no resolution loss. Resolutions in the range from 140 to 200 lines/mm were readily obtained. No indications were found that the selenium plate itself imposed a limit on resolution. 8 Illustrations - 3 References.

ULTRASONIC METHOD OF PLATE CLEANING. Anon. Printing Magazine 84, No. 2, February 1960, pp. 94-95 (2 pages). A description of the use of ultrasonic vibration

of detergent solution to remove dried ink from letterpress printing plates. Cleaning is accomplished in 15 seconds and impressive time and labor savings are noted. 2 Illus.

FOIL PRINTING - A GROWING TREND. Warren L. Rhodes. Printing Magazine 84, No. 2, February 1960, pp. 64,67,71 & 96 (4 pages). Cited figures show growth of printing on foil (doubled since 1952). The advantages of foil cited include desirable characteristics for packaging (particularly) of foods, and striking appearance. The preparation of the foil by laminating, coating, etc. by a converter enables a printer to obtain the necessary printing characteristics. Printing by the various processes using different inks is discussed and suggestions given. An insert illustrates some of the capabilities of this type of printing. 25 References

FOUR-COLOR PROCESS GUIDE - from Photo-Litho Notes. J. S. Mertle. National Lithographer 67, No. 2, February 1960, pp. 48 (1 page). Comments on a new book put out by the Collier Photo Engraving Co. Work is comprehensive in scope, covering all the hues likely to be encountered in 2-,3- and 4-color halftone reproduction. More than 5600 color patches about 1 3/8 x 1 7/8 in. are identified by dot percentages. Reviewer comments "A labor of love on the part of the originators and a practical contribution to the craft by the publisher."

*XEROGRAPHIC PROCESS. French Patent 1,192,339 12/6/57 - 10/26/59. Rank-Xerox Ltd. Ansco Abstracts, Vol. 20, No. 4, April 1960, page 207. Giving a xerographic plate after use an overall exposure to dissipate residual charges involves a time loss of several minutes during the operating cycles. In US 2,741,959 (abstr. 781/56) the photoconductive layer is given a charge of opposite polarity to neutralize the charges. The present patent employs a thin transparent overcoating, preferably polyvinyl acetal. A method resulting in higher plate speed and longer life applies a field of opposite polarity across the plate which forms a layer of positive charges at the interface between selenium and top coating and generates a higher potential than previously available. A plate with overcoating is completely discharged by a fluorescent lamp.

*NEGATIVE PHOTOGRAVURE SCREEN PREPARATION. British Patent 829,874 12/29/55 - 3/9/60. R. M. Gardner. Ansco Abstracts, Vol. 20, No. 4, April 1960, page 216. A photographic layer is exposed at the proper distance through a halftone cross-line screen to a light source having a square line aperture.

*ELECTROSTATIC POWDER IMAGE TRANSFER. French Patent 1.205,569 4/24/57 - 2/3/60. R. W. Gundlach to Rank-Xerox Ltd. Ansco Abstracts, Vol. 20, No. 4, April 1960, page 206. The powder image carried by a photoconducting or insulating coating on a conducting support, e.g. a selenium-coated aluminum plate, is transferred to another conducting support, such as a lithographic metal plate, by charging the insulating coating and connecting the two conductive supports which thus acquire the opposite charge. The process is applicable to printed circuits.

*NONFLAMMABLE LIQUID XEROGRAPHIC DEVELOPER. French Patent 1,202,799 10/1/57 - 1/13/60. Commonwealth of Australia. Ansco Abstracts, Vol. 20, No. 4, April 1960, page 206. Trichloromonofluoromethane and trichlorotrifluoroethane (Freon MF and TF) with a coloring matter such as phthalocyanine blue, and a fixative, such as an alkyd resin, form nonflammable, non-toxic electrophotographic developers.

*XEROGRAPHIC POWDER CLOUD GENERATOR. British Patent 828,737 8/27/56 - 2/24/60. Battelle Development Corporation. Ansco Abstracts, Vol. 20, No. 4, April 1960, page 214. Various means are discussed to produce a stream of a powder aerosol of a desired density through an output tube by means of compressed air. Figures are

given for the amount of powder held by eleven different materials (6-62 mg/in^2) as carrier belts.

*XEROGRAPHIC DEVELOPERS WITH CONDUCTIVE ADDITIVES. U. S. Patent 2,919,247 252/62.1 12/23/54 - 12/29/59. W. M. Allen to Haloid. Ansco Abstracts, Vol. 20, No. 2, February 1960, page 99. Conventional developers fail to develop the interior of large dark areas and exhibit an unwanted adhesion to a xerographic plate. Such a developer is made by ball-milling Amberol F-71 resin with carbon black or another pigment, fusing and ball-milling it again to .1-20 u size before mixing it with Lucite as granular carrier of 30-200 mesh. By adding about 1 pt. of an electrically conducting material such as cobaltic oxide, stannous oxide, or zinc per about 5 pts of toner the defects mentioned above are overcome.

*ELECTROSTATIC PRINTING PROCESS. French Patent 1,204,734 6/27/57 - 1/27/60. B. K. Green and L. Schleicher to Nat'l. Cash Register Company. Ansco Abstracts, Vol. 20, No. 3, March 1960, page 160. An electrostatic image on a dielectric surface is developed by sprinkling it with a fine powder consisting of microscopic capsules containing a liquid ink or dye which clings to the charged areas and is removed elsewhere by compressed air. Neither heat nor a fixative is necessary when the capsules are broken by pressure in contact with a printing material. Stencils or rollers may be used to form the charged letter images on a dielectric surface. The powder may be mixed with a material such as glass beads to generate a triboelectric charge.

*DEVELOPMENT OF ELECTROSTATIC IMAGES. British Patent 828,188 1/18/57 - 2/17/60. C. Bruning Co. Ansco Abstracts, Vol. 20, No. 3, March 1960, page 156. Eight process and apparatus claims cover a machine which avoids formation of a developer powder cloud liable to settle anywhere. A rotating cylinder holds a layer of magnetic particles mixed with developer powder by magnetic and triboelectric attraction respectively and brings them into close tangential contact with the electrostatically charged latent image for transfer. The image carrier is agitated, e.g. by rotating polygonal rolls, to distribute the powder uniformly over the image and facilitate separation and falling off of the magnetic particles entrained with the developer powder.

*ELECTROSTATIC IMAGE DEVELOPMENT CONTROL BY AN ELECTRIC FIELD. British Patent 827,291 3/23/55-2/3/60. RCA. Ansco Abstracts, Vol. 20, No. 3, March 1960, page 152. In the development of electrostatic latent images by a magnetic brush comprising a magnet carrying a developer mix of developer powder and magnetic carrier particles a direct or reversal image of increased contrast and without spurious background can be produced by application of a voltage of -1000 to +1000 v dc between brush and plate back.

*STATIC ELIMINATOR. U. S. Patent 2,920,987 134/1 1/24/58 - 1/12/60. J. L. Landry and F. G. Sandholdtto Norton Company. Ansco Abstracts, Vol. 20, No. 3, March 1960, page 133. Particles adhering to sheets of poorly conducting material due to static charges are removed by suction while the sheet is passing a grounded rotating cylinder with small metal projections having a brushing action. Below the grounded cylinder, on the other side of the sheet, is an electrode connected to a source of high voltage alternating current, generally 20,000 - 50,000 volts, to set up an electric field between anode and cylinder and to dampen the static charge to practically zero.

WHICH WAY LETTERPRESS? Alex C. James. Graphic Arts Focal Point #5, 1960, pp. 2-5 (4 pages). Techniques in letterpress are changing. This study of current trends briefly surveys needs and indicates that the logical course of letterpress development would involve: (A) Photographic type composition; (B) Light sensitive plastic or powderless-etched metal plates; (C) Rotary presses. 4 Illustrations.

McCALL'S PROVES ACCIDENTS CAN BE REDUCED. H. H. Slawson. Modern Lithography 28, No. 3, March 1960, pp. 36,37,38 (3 pages). Accident rate was reduced from 9.66 to 1.44 lost time accidents per million man-hours over a 6 year period. Employee education is given chief credit. Ten safety rules applying to press operation are listed. Safety rules for other areas are touched on. 5 Illustrations.

WHAT DOES THE FUTURE HOLD? R. E. Fisher. (From a talk given at a meeting of the Pittsburgh Club of Printing House Craftsmen.) Modern Lithography 28, No. 3, pp. 32, 3,4, 143 (4 pages), March 1960. Author points to growing population, higher educational level, and increased income as forecasting: "Advertising budgets into the stratosphere." Weaknesses in the situation are pointed out as 1. Printers are not making enough money; 2. Some of the important people printers serve are not making enough money; 3. Printers are not doing all they can to make their service more attractive. On the last point, the tendency to resist change is cited. As an example of progress, the P.D.I. Color Scanner is described. 1 Illustration.

PLANNING OFFSET OR LETTERPRESS PLANT REQUIRES CAREFUL ATTENTION TO MANY DETAILS. Olin Freedman. The Inland and American Printer and Lithographer 144, No. 5, February 1960, pp. 45-46 (2 pages). Plant planning stems from two basic needs: modernization or expansion, and can involve existing quarters, expansion or relocation. Some planning steps required include complete engineering drawings of existing buildings, surveys and complete data on zoning, utilities available and building regulations for new buildings. It is necessary to study contemplated work loads by departments, then start layouts by departments which can be assembled into an overall layout. The services of a specialist for such work are suggested.

A PRINTER CAN PREVENT FIRE LOSS. Jack Stroube. Printing Production 90, No. 5, February 1960, pp. 43,4,5-78 (4 pages). It is pointed out that actual fire loss can be small in comparison to the costs of side effects such as the loss of business due the loss of use of equipment during repair or replacement. Basic fire hazards are listed as: 1. Housekeeping; 2. Hot surfaces; 3. Open flames or sparks; 4. Flammable liquid; 5. Electricity; 6. General maintenance. When a hazard is identified, it can be eliminated, isolated or protected. Some insurance companies provide engineering services in such matters. Training programs are suggested to combat the human failure part of the problem. Modern Lithography 28, No. 2, February 1960, pp. 34,5, 6, 121 (4 pages).